

Grade Six, Unit Five Sample Lesson Plan

The Number Devil: A Mathematical Adventure, by Hans Magnus Enzensberger

In this series of four lessons, students:

- Examine Enzensberger’s ways of introducing math in fictional form (RL.6.1, RL.6.2, RL.6.3, RI.6.2, RI.6.3, RI.6.8)
- Emulate Enzensberger’s style and write new mathematical adventures (SL.6.1, W.6.2, W.6.3, W.6.4, W.6.5)

Summary

<p>Lesson I: Meet the Number Devil and Robert</p> <p>Articulate the plot of the dream in “The First Night”</p> <p>Identify the leading characters of the dream (RL.6.6)</p> <p>Examine the setting of the dream (RL.6.3)</p> <p>Identify the shape and function of the calculator in the chapter</p> <p>Investigate the mathematical concepts of the dream (RI.6.2, RI.6.3, RI.6.8)</p>	<p>Lesson II: Eleven Nights—Eleven Dreams (<i>Note:</i> In eleven groups)</p> <p>Read the assigned dream</p> <p>Discuss the plot of the dream</p> <p>Note the evolution of the characters (RL.6.6)</p> <p>Identify the setting (RL.6.3)</p> <p>Explore the particular shape and function of the calculator</p> <p>Investigate the mathematical concepts in the dream (RI.6.2, RI.6.3, RI.6.8)</p> <p>Consult the Seek-and-Ye-Shall-Find List</p>
<p>Lesson III: Eleven New Dreams</p>	<p>Lesson IV: Eleven New Dreams Revealed</p>

Revisit the assigned dream	Share Robert's new dreams (SL.6.1)
Recollect the mathematical concepts	Enjoy Robert's new adventures (SL.6.1)
Exchange ideas for a new dream (SL.6.1)	Appreciate the new mathematical challenges
Collaborate in the creation of a new mathematical adventure (W.6.2, W.6.4, W.6.5)	

Lesson III: Eleven New Dreams

Objectives

Revisit the assigned dream

Recollect the mathematical concepts

Exchange ideas for a new dream (SL.6.1.a,b,c,d)

Collaborate in the creation of a new mathematical adventure (W.6.2.a, W.6.3.a,b, W.6.4, W.6.5)

Required Material

- ☐ Class sets of *The Number Devil: A Mathematical Adventure*, by Hans Magnus Enzensberger
- ☐ Lined paper for writing
- ☐ Rulers
- ☐ Calculators
- ☐ Colored pencils and markers
- ☐ Drawing paper

Procedures

1. Lead-In

In the groups that were established in Lesson II, students revisit the assigned dream and recollect its mathematical concepts.

2. Step by Step

- a. Each group exchanges ideas for a new dream and a new mathematical adventure for Robert. Each of the dreams must have several necessary components:
 - A plot
 - Two characters
 - A setting
 - A calculator
 - Mathematical concepts

Remind the students that all of the components above must work together.

- b. Once the students have their story line, they must clearly articulate their mathematical adventure. They may use calculators, rulers, or any other tools that are available.
- c. Students need to consider the illustrations that they will draw. The illustrations must reflect the specific setting of their story. Students must determine what the calculator will look like. They must also decide how to represent the mathematical concept that they explore.
- d. With guidance, the students assign roles for writing and illustrating Robert's new adventures.
- e. Collaboratively, the students write, revise, draw, and complete a new mathematical adventure.

3. Closure:

The closure for this work is in the next lesson, when each group shares its work with the rest of the class.

Differentiation

Advanced

- Intentionally assign students to a dream that contains a mathematical concept that is more difficult to explain.
- Encourage students to select a challenging concept for their new mathematical adventure.
- Encourage students to represent their mathematical adventure online. After writing the adventure, transform it into a screen capture or comic using a comic creation web tool.
- If the students are good editors, have them peer edit the dreams written by classmates.

Struggling

- Intentionally assign students to a dream that contains a mathematical concept that is easier to explain.
- Provide students with a list of easier mathematical concepts from which to choose. If students are stymied, provide the book *Math Curse*, by Jon Scieszka, as an additional support.
- Provide students with a graphic organizer to complete as they brainstorm their adventure (plot, two characters, setting, calculator, and mathematical concept).
- After partners talk through their mathematical adventure, write the first section with them before asking them to continue on their own.
- Allow students to represent their mathematical adventure online, transforming it into a screen capture, a comic using a comic creation web tool, or an online story.

Homework/Assessment

The above assignment will enable the teacher to assess the students’:

- Comprehension of mathematical concepts
- Ability to articulate their understanding in an imaginative way
- Ability to work collaboratively with their peers.